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A TRAP UNIT FOR INSECT EMERGENCE CAGES

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The insect trap and cage attachments herein described were developed in connection with the emergence studies of adult potato flea beetles, Epitrix tuberis Gentner and E. subcrinita (Lec.). As the adults of these species are able to escape through openings which seem to be too small for any insect to pass through, a trap unit was devised which practically eliminates escape. These traps are simple in construction, easy to handle, readily cleaned, and adaptable to many types of cages.

The traps differ from those described by Donohoe (ET-130) and Shiller (ET-226) in that the cone and metal jar cap are parts of the trap unit.

The trap unit (fig. 1) consists of any-size standard fruit jar with the screw cap and a celluloid cone. The cap filler, or lid, is not used. The cone is made in the following manner from sheet celluloid 0.01 inch thick and 1/4-inch celluloid tubing. After a 3 1/4-inch disk is cut from the celluloid, a 1/4-inch hole is drilled in the center and a 65° section cut out of the disk (fig. 2). The disk is then cupped and the two edges are joined (not overlapped) with celluloid cement, and finally a 3/4-inch length of tubing is cemented over the hole at the top. When the cone is placed in the jar, the basal edge is pressed between the jar mouth and the screw cap, forming a seal. The only opening into the trap unit is through the apex of the cone.

Three methods of attaching the trap unit to emergence cages (fig. 3) have been devised, which not only prevent insects from escaping but also facilitate rapid and easy changing of the trap units. All methods employ a block of marine or waterproof plywood 4 by 4 by 1 1/2 inches, in the center of which is a 2 1/4-inch hole plus one of the following additions: (1) The hole in the block is enlarged to 2 7/8 inches for a depth of 1/2 inch, to permit the trap to rest on a 5/16-inch ledge in the block (fig. 3,A). (2) Two clamps are made of 22-gage phosphor-bronze strips bent as shown in figure 3,B and screwed to the block on opposite sides of the hole. The trap unit slides on top of the block, the upper edge of the screw cap being caught under the projections of the bronze springs, which hold the trap unit securely in place. (3) A No. 20 tension spring is fastened to the block by screw eyes on opposite sides of the hole, the top of the springs being connected by No. 12 galvanized wire bent as shown in

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figure 3,C. Since the wire passes over the top of the trap unit, the length of the wire and spring will depend on the size of the jar used.

Figure 4 shows these trap units on emergence cages. It also illustrates how the attaching blocks can be built in or attached to different types of cages.

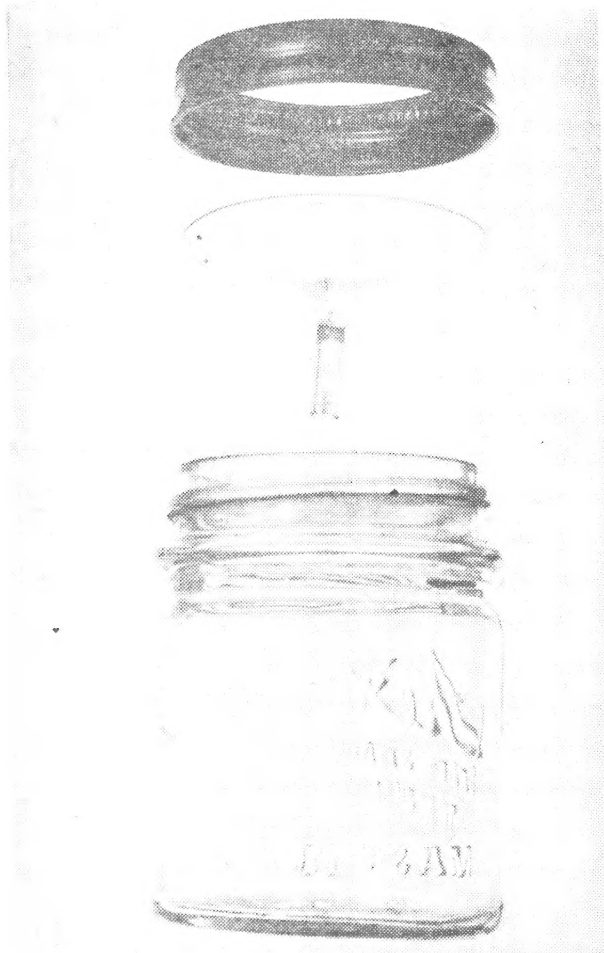


Figure 1.--Insect trap unit showing glass fruit jar, celluloid cone, and jar-lid retainer ring to be assembled.

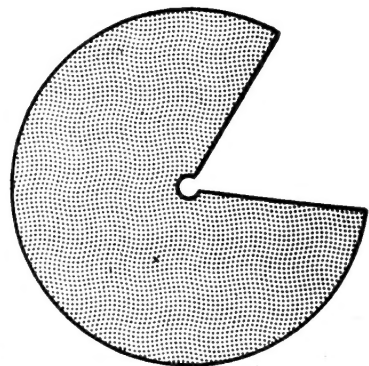


Figure 2.--Celluloid disk as cut to form funnel used in trap unit.

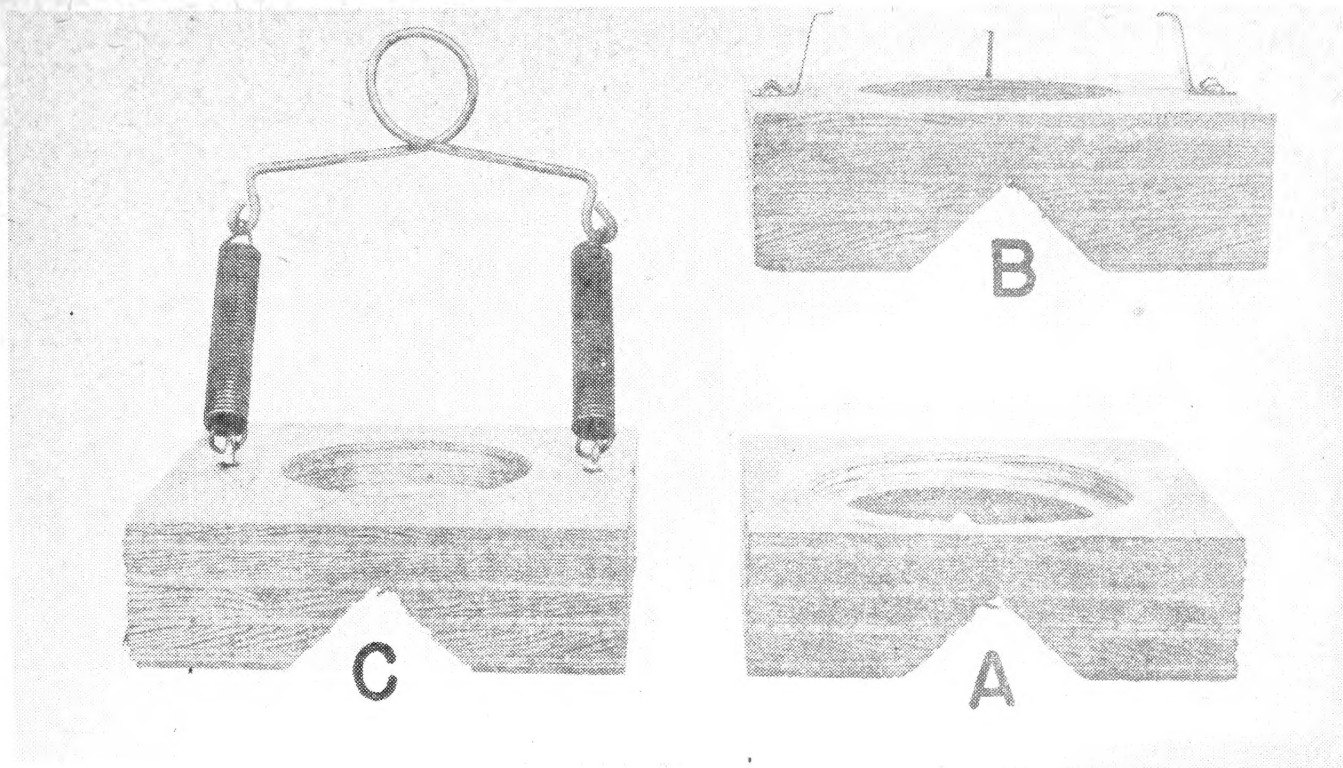


Figure 3.--Plywood blocks used on or as part of insect cages for attaching cage units to them, showing (A) a recess cut to receive the jar cover, (B) phosphor-bronze spring clips to hold edge of jar lid to secure the trap unit, and (C) coil springs and wire clip to be slipped over the jar to hold it in place.

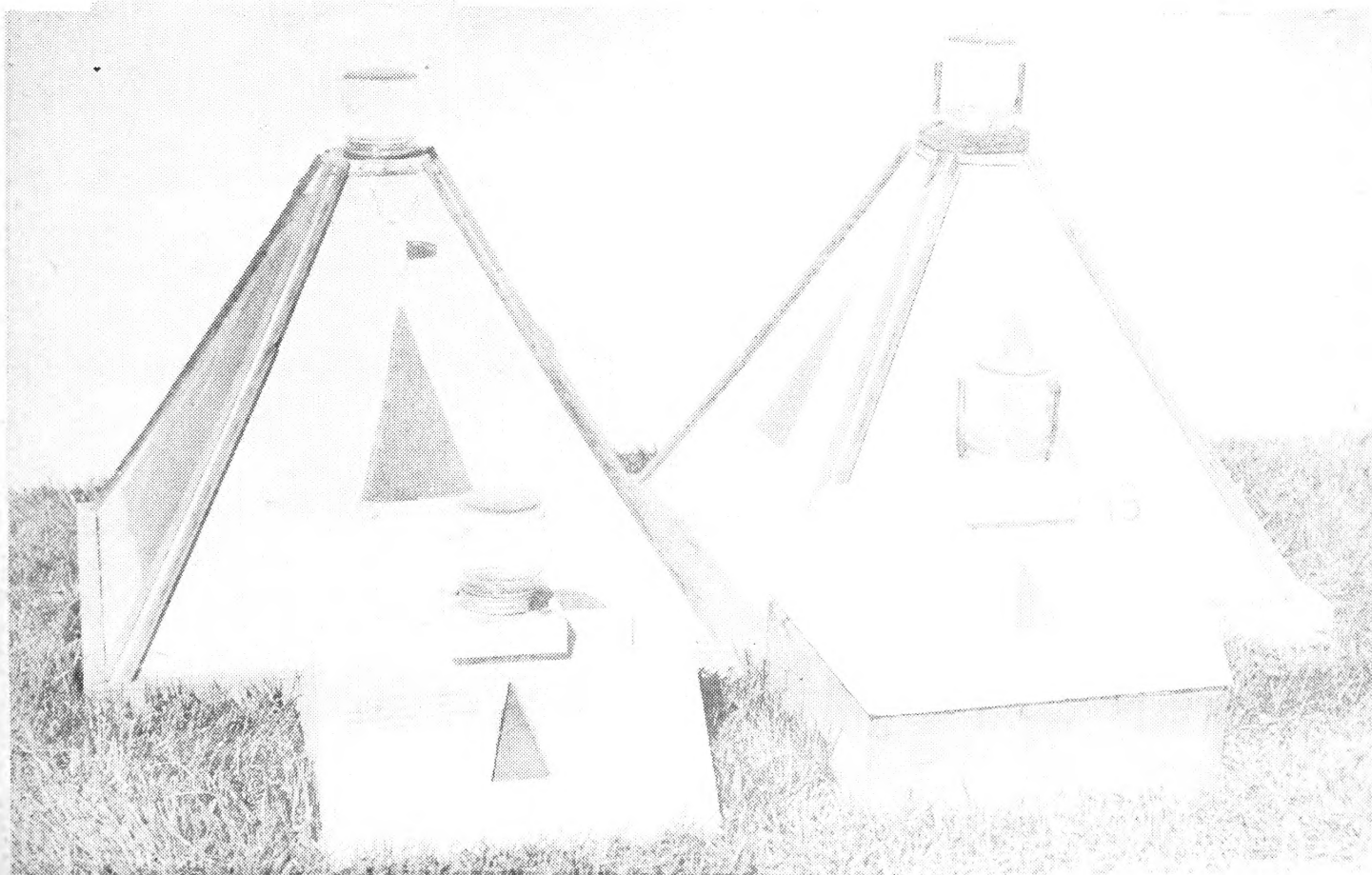


Figure 4.--Insect-trap units in place on emergence cages, showing various methods of attachment.

